第二節　　二零一八年熱帶氣旋概述

2.1　二零一八年的熱帶氣旋回顧

2.1.1 北太平洋西部（包括南海區域）的熱帶氣旋

二零一八年有33個熱帶氣旋影響北太平洋西部及南海區域（即由赤道至北緯45度、東經100至180度所包括的範圍），多於1961-2010年約30個的長期年平均數目。全年有13個熱帶氣旋達到颱風或以上強度，少於1961-2010年約15個的長期年平均數目，其中有七個熱帶氣旋更達到超強颱風程度(中心附近最高持續風速達到每小時185公里或以上)。

圖2.1是二零一八年在北太平洋西部及南海區域熱帶氣旋數目之逐月分佈。

二零一八年內有11個熱帶氣旋在中國登陸，其中三個在香港300公里內的華南沿岸登陸，兩個橫過台灣。兩個熱帶氣旋登陸朝鮮半島，五個登陸日本，六個橫過菲律賓及四個登陸越南。九月的超強颱風山竹(1822)及十月的超強颱風玉兔(1826)（圖2.3a及2.3b）是二零一八年北太平洋西部及南海區域最強的熱帶氣旋，其中心附近最高持續風速估計為每小時250公里，而最低海平面氣壓為900百帕斯卡（表4.1）。

2.1.2 香港責任範圍內的熱帶氣旋

在二零一八年的33個熱帶氣旋中，有17個出現在香港責任範圍（即北緯10至30度、東經105至125度），稍多於 1961-2010年約16個的長期年平均數目（表2.1），當中有13個在香港責任範圍內形成。年內，香港天文台總共發出393個供船舶使用的熱帶氣旋警告表4.2）。

2.1.3 南海區域內的熱帶氣旋

二零一八年共有12個熱帶氣旋影響南海區域 (即北緯10至25度、東經105至120度)，與1961-2010年約12個的長期年平均數目相約，當中有六個在南海上形成。

2.1.4 影響香港的熱帶氣旋

二零一八年香港的颱風季節始於六月五日，當天隨著熱帶低氣壓艾雲尼(1804)掠過海南島以東海域，天文台發出一號戒備信號。十一月二日隨著徘徊在南海東北部的熱帶低氣壓玉兔(1826)明顯減弱，二零一八年颱風季節隨著天文台當天取消所有熱帶氣旋警告信號而結束。

年內共有六個熱帶氣旋影響香港（圖2.2），接近1961-2010年約六個的長期年平均數目(表2.2)。這六個熱帶氣旋分別為六月的熱帶風暴艾雲尼(1804)、七月的熱帶風暴山神(1809)、八月的強烈熱帶風暴貝碧嘉(1816)、九月的超強颱風山竹(1822)及熱帶風暴百里嘉(1823)、和十月至十一月的超強颱風玉兔(1826)。山竹影響香港期間，天文台在九月十六日曾發出十號颶風信號，是年內發出的最高熱帶氣旋警告信號，也是繼二零一七年天鴿後再次發出最高級別的熱帶氣旋警告信號，並持續了10小時，是戰後第二最長的十號颶風信號，僅次於一九九九年約克的11小時。其餘五個影響香港的熱帶氣旋均引致天文台發出三號強風信號。當中熱帶風暴山神(1809)引致天文台兩度發出熱帶氣旋警告，而強烈熱帶風暴貝碧嘉(1816) 長時間在廣東西部沿海一帶徘徊，引致熱帶氣旋警告信號連續生效了132小時5分鐘，是一九四六年以來的第三最長。

2.1.5 熱帶氣旋的雨量

二零一八年熱帶氣旋為香港帶來的雨量（即由熱帶氣旋出現於香港600公里範圍內至其消散或離開香港600公里範圍之後72小時期間天文台總部錄得的雨量）共為723.7毫米（表4.8.1），約佔年內總雨量2162.9毫米的百分之33.5，比1961-2010年長期年平均值的728.8毫米少約1%。

強烈熱帶風暴貝碧嘉(1816)為天文台總部帶來236.4毫米的雨量(表4.8.1)，是年內雨量最多的熱帶氣旋。

2.2 每月概述

這一節逐月介紹二零一八年北太平洋西部及南海區域的熱帶氣旋概況。影響香港的各熱帶氣旋及傷亡報告則詳述於第三節。

一月

熱帶低氣壓布拉萬(1801)於一月二日早上在菲律賓附近、馬尼拉之東南偏南約600公里形成，向西至西北偏西方向移動，橫過南海南部。翌日布拉萬增強為熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時65公里。隨後布拉萬開始減弱，最後於一月四日上午在越南南部附近海域減弱為一個低壓區。

根據報章報導，布拉萬為菲律賓帶來狂風暴雨，引發嚴重水浸及山泥傾瀉，造成至少三人死亡。最後於一月十日清晨在蘇祿海上減弱為一個低壓區。

二月

熱帶低氣壓三巴(1802)於二月十一日早上在雅蒲島之西南偏南約360 公里的北太平洋西部上形成，向西至西北偏西移向菲律賓南部。三巴於二月十三日凌晨增強為熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時65公里。當晚三巴減弱為熱帶低氣壓，最後於二月十四日晚上在蘇祿海上減弱為一個低壓區。

根據報章報導，三巴為菲律賓帶來狂風暴雨，引發嚴重水浸及山泥傾瀉，造成至少14人死亡。

三月至四月

熱帶低氣壓杰拉華(1803)於三月二十五日下午在雅蒲島之東南約430公里的北太平洋西部形成，翌日增強為熱帶風暴，向西北移動。杰拉華於三月二十七日轉向北移動，三月二十九日減慢向東漂移，並繼續發展。杰拉華翌日轉向東北移動並一度增強為超強颱風及達到其最高強度，中心附近最高持續風速估計為每小時195公里。隨後開始迅速減弱及向東移動，最後於四月一日在硫黃島東南之北太平洋西部消散。

五月

二零一八年五月並無熱帶氣旋在北太平洋西部及南海區域上形成。

六月至十一月

熱帶低氣壓艾雲尼(1804)於六月二日晚上在西沙以南約510公里的南海南部上形成，向西北偏北移動。六月四日艾雲尼轉向北至東北偏北方向移動，翌日掠過海南島以東海域。六月六日艾雲尼移動減慢，並增強為熱帶風暴，在雷州半島以東及海南島東北部打圈徘徊。六月七日早上艾雲尼達到其最高強度，中心附近最高持續風速估計為每小時75公里，並開始穩定地向東北偏北方向移動，晚上在廣東西部海岸陽江市附近登陸，並逐漸減弱，最後於六月八日晚上在廣東內陸減弱為一個低壓區。

根據報章報導，艾雲尼為海南、廣東、廣西、福建及湖南帶來暴雨，多處出現水浸及山泥傾瀉，共造成至少五人死亡，超過21萬人受災。

熱帶低氣壓馬力斯(1805)於六月八日清晨在馬尼拉之東北偏東約760公里的北太平洋西部上形成，初時向西北偏北移動並逐漸增強。翌日馬力斯採取東北路徑移向日本以南海

域，當晚增強為強烈熱帶風暴，六月十日早上達到其最高強度，中心附近最高持續風速估計為每小時110公里。最後馬力斯在六月十二日於日本以東的海域演變為一股溫帶氣旋。

熱帶低氣壓格美(1806)於六月十四日在高雄之西南約180公里的南海東北部上形成，向東北移動，翌日橫過台灣南部。格美於六月十六日在沖繩島附近增強為熱帶風暴，向東北偏東移動，當晚達到其最高強度，中心附近最高持續風速估計為每小時75公里。翌日格美在日本以南海域演變為一股溫帶氣旋。

根據報章報導，格美吹襲台灣期間，高雄市13,500戶停電，兩艘油輪擱淺。格美在沖繩島引發多處水浸及山泥傾瀉，至少兩人受傷。

熱帶低氣壓派比安(1807)於六月二十九日清晨在沖繩島之東南偏南約750公里的北太平洋西部上形成，大致向西北偏北方向移動並逐漸增強。七月一日派比安轉向北至東北移動，翌日早上增強為颱風並達到其最高強度，中心附近最高持續風速估計為每小時120公里。隨後派比安開始減弱，最後於七月四日在本州以北的海域演變為一股溫帶氣旋。

根據報章報導，派比安吹襲沖繩期間，至少有四人受傷。派比安為日本九州及四國帶來狂風大雨，造成至少一死16傷。九州有逾5萬戶停電。派比安亦在韓國造成最少一人死亡及一人失蹤。

熱帶低氣壓瑪莉亞(1808)於七月三日晚上在關島之東南約430公里的北太平洋西部上形成，大致向西北方向移動並迅速增強。瑪莉亞於七月六日早上增強為超強颱風，於七月九日早上達到其最高強度，中心附近最高持續風速估計為每小時220公里。瑪莉亞先後掠過沖繩島以南海域及台灣以北海域，並逐漸減弱，七月十一日早上在福建沿岸登陸，翌日在江西消散。

根據報章報導，瑪莉亞在台灣造成至少一死八傷，約126,000戶停電。瑪莉亞吹襲福建和浙江期間，亦造成至少一人死亡，九人失蹤，約55萬人受災，多處地方出現海水倒灌。

熱帶低氣壓山神(1809)於七月十六日早上在馬尼拉之東北約650公里的北太平洋西部上形成，當日向西迅速橫過呂宋海峽，翌日進入南海北部後繼續迅速移動，中午前增強為熱帶風暴，七月十八日凌晨達到其最高強度，中心附近最高持續風速估計為每小時85公里。山神橫過海南島及北部灣後，於七月十九日在越南北部減弱為一個低壓區，其殘餘當日繼續向西移入內陸。與山神相關的殘餘低壓區於七月二十日在中南半島向東迴轉，移向北部灣。它於七月二十二日在北部灣再度增強為熱帶低氣壓，並向東北移動掠過海南島西北部，其後在七月二十三日轉向北橫過雷州半島。山神於七月二十四日在廣西消散。

根據報章報導，山神吹襲海南島期間，海陸空交通大受影響。山神及其殘餘亦為越南帶來暴雨，造成至少32人死亡，17人失蹤，超過5 000間房屋倒塌。

熱帶低氣壓安比(1810)於七月十八日晚上在沖繩島之東南偏南約800公里的北太平洋西部上形成，初時移動緩慢。安比翌日增強為熱帶風暴，並採取西北路徑朝東海方向移動。安比於七月二十日晚上進一步增強為強烈熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時90公里。安比於七月二十二日下午橫過江蘇一帶並減弱，翌日繼續橫掃山東及河北，七月二十四日在中國東北部演變為一股溫帶氣旋。

根據報章報導，安比在中國造成最少一人死亡，近180萬人受災，直接經濟損失達11.9億元人民幣。

一個熱帶低氣壓於七月二十一日在東沙之東南約390公里的南海北部上形成，向東北方向橫過呂宋海峽，移向台灣以東海域。該熱帶低氣壓於七月二十二日清晨達其最高強度，中心附近最高持續風速估計為每小時55公里。隨後該熱帶低氣壓轉向北移動，翌日在東海減弱為一個低壓區。

熱帶低氣壓悟空(1811)於七月二十二日晚上在威克島之西北約890公里的北太平洋西部上形成，大致向偏北方向移動，並逐漸增強。悟空於七月二十五日增強為強烈熱帶風暴，並達其最高強度，中心附近最高持續風速估計為每小時105公里。七月二十六日悟空於日本以東海域演變為一股溫帶氣旋。

熱帶低氣壓雲雀(1812)於七月二十五日在硫黃島之西南約690公里的北太平洋西部上形成，大致向東北方向移動，並逐漸增強。雲雀於七月二十六日晚上增強為颱風，翌日早上達到其最高強度，中心附近最高持續風速估計為每小時140公里。雲雀於七月二十九日先後橫掃日本本州南部及九州北部，並減弱為熱帶風暴。隨後兩天雲雀以逆時針方向在九州以南海域轉了一個圈，然後於八月一日以西南偏南路徑橫過東海。八月二日早上雲雀向北迴轉，隨後向西加速。雲雀於八月三日日間在上海沿岸登陸及移入內陸，晚間在江蘇減弱為一個低壓區。

根據報章報導，雲雀吹襲日本期間，造成至少24人受傷，超過15萬戶停電，逾400班航班取消。

熱帶低氣壓珊珊(1813)於八月二日晚上在關島之東北偏東約880公里的北太平洋西部上形成，初時向西方向移動。珊珊於八月三日開始採取西北偏北路徑移向日本，並逐漸增強。珊珊於八月四日增強為颱風，並於八月七日達到其最高強度，中心附近最高持續風速估計為每小時145公里。隨後珊珊逐漸減弱，於八月九日掠過日本關東沿岸地區，並轉向東

北方向移動。翌日珊珊在日本以東的海域演變為一股溫帶氣旋。根據報章報導，珊珊吹襲日本期間，造成至少六人受傷。

熱帶低氣壓摩羯(1814)於八月七日在沖繩島之東南約980公里的北太平洋西部上形成，初時移動緩慢。翌日摩羯增強為熱帶風暴，並於隨後數天移向沖繩島。摩羯掠過沖繩島以南海域後，採取西北路徑橫過東海，八月十二日下午達到其最高強度，中心附近最高持續風速估計為每小時85公里。摩羯登陸浙江沿岸後，移入內陸及減弱，摩羯於八月十五日移出渤海並再度短暫增強為熱帶風暴，最後於八月十六日在山東減弱為一個低壓區。

根據報章報導，摩羯吹襲華東期間造成至少二人死亡。

熱帶低氣壓貝碧嘉(1816)於八月九日在香港之西南約540公里的南海北部上形成，向北緩慢移動，在八月十一日接近正午於廣東西部陽江附近登陸。隨後貝碧嘉以逆時針方向在廣東西部沿岸地區徘徊及於當晚移回沿岸海域，八月十二日貝碧嘉向東南漂移並增強為熱帶風暴，它於八月十三日至十四日以逆時針方向在廣東西部沿岸海域徘徊，八月十五日貝碧嘉加速向西南偏西移動，並增強為強烈熱帶風暴，達到其最高強度，中心附近的最高持續風速估計為每小時90公里。翌日貝碧嘉橫過北部灣，八月十七日在越南北部登陸及在內陸減弱為一個低壓區。

根據報章報導，貝碧嘉為廣東、廣西及海南帶來狂風暴雨，造成最少三人死亡、二人失蹤。貝碧嘉吹襲越南期間，多處有水浸及山泥傾瀉，至少有10人死亡，三人失蹤。

熱帶低氣壓麗琵(1815)於八月十一日晚上在硫黃島之東南偏南約560公里的北太平洋西部上形成，向西北移動並逐漸增強。麗琵於八月十三日增強為強烈熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時90公里。麗琵於八月十五日橫過日本九州，隨後在朝鮮半島以南海域減弱為一個低壓區。 根據報章報導，麗琵為日本九州帶來狂風暴雨，一人被強風吹倒墮海重傷。

赫克托(1817)在北太平洋東部上形成，八月十四日凌晨以熱帶風暴強度越過國際換日線進入北太平洋西部，中心附近最高持續風速估計為每小時75公里。赫克托向西北偏西方向移動並繼續減弱，翌日在海上消散。

熱帶低氣壓溫比亞(1818)於八月十五日早上在沖繩島之西北偏北約90公里的北太平洋西部上形成，下午增強為熱帶風暴，向西北或西北偏西移動，橫過東海。溫比亞於八月十六日晚上達到其最高強度，中心附近最高持續風速估計為每小時85公里。溫比亞於八月十七日早上登陸上海沿岸，採取西北偏西路徑移入內陸並逐漸減弱，翌日晚上在河南減弱為一個低壓區。

根據報章報導，溫比亞在華東及華中共造成至少22人死亡及七人失踪，超過一千萬人受災，直接經濟損失接近50億元人民幣。

熱帶低氣壓蘇力(1819)於八月十六日在關島之西北約190公里的北太平洋西部上形成，大致採取偏北路徑移動，並逐漸增強。蘇力於八月十八日在硫黃島以西的海域增強為強颱風，並轉向西北偏西移動，翌日早上達到其最高強度，中心附近最高持續風速估計為每小時165公里。隨後蘇力先後橫過東海及黃海，並逐漸減弱，八月二十三日轉向東北移動，晚上減弱為強烈熱帶風暴並橫過朝鮮半島。蘇力於翌日晚間在日本本州以北的海域上演變為一股溫帶氣旋。

根據報章報導，蘇力吹襲韓國期間，一人被大浪捲走失蹤、兩人受傷。而蘇力在日本奄美大島亦造成至少一人受傷，逾2萬戶停電。

熱帶低氣壓西馬侖(1820)於八月十八日早上在關島以東約1060公里的北太平洋西部上形成，採取西北路徑移向日本以南海域，並逐漸增強。西馬侖於八月二十二日增強為強颱風，並達到其最高強度，中心附近最高持續風速估計為每小時165公里。西馬侖於八月二十三日晚間先後橫掃日本四國及本州西部，八月二十四在日本本州以北的海域上演變為一股溫帶氣旋。

根據報章報導，西馬侖為日本帶來狂風暴雨，引致山泥傾瀉，造成至少三人死亡、22人受傷，近10萬戶停電。

一個在南海東北部形成及徘徊在台灣附近的低壓區於八月二十三日上午在高雄以北約40公里處發展為一個熱帶低氣壓，其中心附近最高持續風速估計為每小時55公里。該熱帶低氣壓移動緩慢，當日在台灣西部徘徊，翌日向西北移動，橫過台灣海峽。它於八月二十五日早上在福建沿岸登陸，日間在福建內陸減弱為一個低壓區。

根據報章報導，該熱帶低氣壓為台灣帶來狂風暴雨，引致多處水浸，造成至少七人死亡、119人受傷。

熱帶低氣壓飛燕(1821)於八月二十七日晚上在關島以東約1 520公里的北太平洋西部上形成，初時向西北方向移動並迅速增強。飛燕於八月二十九日增強為颱風並轉向西移動，於八月三十一日進一步發展為超強颱風，翌日早上達到其最高強度，中心附近最高持續風速估計為每小時230公里。隨後兩天飛燕逐漸由西北轉向偏北移動，靠近日本以南海域，並減弱為強颱風。九月四日日間飛燕先後橫掃日本四國東部、大阪灣及本州的關西地區，翌日在北海道以西的海域演變為一股溫帶氣旋。

根據報章報導，飛燕為日本帶來狂風暴雨，廣泛地區受嚴重破壞，至少有11人死亡、超過680人受傷，超過200萬戶停電。飛燕所引發的嚴重風暴潮令大阪一帶錄得當地歷來的最高水位，沿岸地區嚴重水浸，當中關西國際機場需要全面關閉三日，超過5 000名乘客滯留機場。

熱帶低氣壓山竹(1822)於九月七日在關島以東約2 330公里的北太平洋西部上形成，隨後數天迅速向西移動，並逐漸增強，於九月十一日發展為超強颱風。山竹在九月十四日轉向西北移動，在登陸呂宋前達到其最高強度，中心附近的最高持續風速估計為每小時250公里。山竹橫過呂宋北部後減弱，並繼續迅速以西北路徑橫過南海北部，移近廣東沿岸。山竹在九月十六日上午減弱為強颱風，黃昏前在廣東台山附近登陸，隨後移入廣東西部及進一步減弱。翌日晚上山竹在廣西減弱為一個低壓區。

根據報章報導，山竹為呂宋帶來狂風暴雨。最少有82人死亡、138人受傷及兩人失蹤，約15 000房屋倒塌。山竹為珠江口沿岸帶來破壞性的風力及嚴重的風暴潮，多處建築物及沿岸設施受損，低窪地區嚴重水浸。澳門有40人受傷，超過5 500人撤離，有多宗建築物損毀報告。內港水浸高度曾達1.9米或以上。山竹亦在廣東、廣西、海南、貴州及雲南造成至少六人死亡，接近330萬人受災。

熱帶低氣壓百里嘉(1823)於九月十日早上在高雄之東南約200公里的海域上形成，大致向偏西方向移動，橫過南海北部。百里嘉於九月十一日增強為熱帶風暴，翌日晚上達到最高強度，中心附近最高持續風速估計為每小時85公里。九月十三日百里嘉橫過雷州半島及減弱，傍晚在廣西內陸消散。根據報章報導，受百里嘉影響，湛江及茂名共有4萬人需要撤離。

熱帶低氣壓潭美(1824)於九月二十一日晚在關島之西北約320公里的北太平洋西部上形成，向西北偏西方向移動，並迅速增強。潭美於九月二十三日增強為颱風，翌日進一步增強為超強颱風。潭美於九月二十五日清晨達到其最高強度，中心附近最高持續風速估計為每小時220公里。當晚它轉向東北偏北方向緩慢移動，並開始減弱。隨後數天潭美逐漸移向琉球群島一帶，於九月二十九日掠過沖繩島後，採取東北路徑移向日本本州。潭美於九月三十日晚間橫過本州，翌日在本州東北部演變為一股溫帶氣旋。

根據報章報導，潭美吹襲日本期間造成至少五人死亡、一人失蹤及200人受傷，逾130萬戶停電。受潭美影響，日本海陸空交通幾乎癱瘓，超過十萬旅客受影響。

熱帶低氣壓康妮(1825)於九月二十九日清晨在關島之東南偏南約370公里的北太平洋西部上形成，向西北偏西移動，並迅速增強。康妮於九月三十日晚增強為颱風，翌日晚上進一步增強為超強颱風，十月二日早上達到最高強度，中心附近最高持續風速估計為每小

時230公里。十月三日康妮開始逐漸減弱並繼續移向琉球群島一帶。康妮於十月五日及六日先後掠過濟州島及朝鮮半島南部，最後於十月七日在北海道附近演變為一股溫帶氣旋。

根據報章報導，康妮為日本帶來狂風暴雨，造成最少一人死亡、十人受傷，沖繩縣和鹿兒島縣有逾四萬戶停電。康妮吹襲韓國期間亦造成至少兩人死亡和一人失蹤，超過六萬戶停電。

熱帶低氣壓玉兔(1826)於十月二十一日下午在關島之東南偏東約1 620公里的北太平洋西部上形成，大致向西北方向移動並迅速增強。玉兔於十月二十四日增強為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時250公里。玉兔於十月二十六日及二十七日轉向西至西南偏西移動及開始逐漸減弱，十月三十日橫過呂宋後進入南海中部並減弱為颱風。玉兔於翌日進一步減弱為強烈熱帶風暴並轉向西北移動，橫過南海東北部。玉兔於十一月一日向偏北方向緩慢移動，晚上減弱為熱帶風暴。受華南乾燥東北季候風影響，翌日玉兔進一步減弱為熱帶低氣壓並在南海東北部徘徊，最後於晚上減弱為低壓區。

根據報章報導，玉兔吹襲塞班島期間造成至少兩人死亡及133人受傷，多處地方停電。玉兔為菲律賓北部帶來狂風暴雨並引發山泥傾瀉及水浸，造成最少20人死亡。

熱帶低氣壓桃芝(1827)於十一月十七日下午在胡志明市以東約550公里的南海南部上形成，大致採取西北路徑移向越南南部，其中心附近最高持續風速估計為每小時55公里。翌日下午桃芝在越南南部登陸並迅速減弱為低壓區。

根據報章報導，桃芝影響越南期間造成至少19人死亡。

熱帶低氣壓天兔(1829)於十一月二十日上午在馬尼拉之東南偏東約 940公里的菲律賓以東海域上形成，向西橫過菲律賓南部。天兔於十一月二十二日橫過南海南部，翌日增強為熱帶風暴並向西南偏西方向移動。天兔於十一月二十四日進一步增強為強烈熱帶風暴，並達其最高強度，中心附近最高持續風速估計為每小時90公里。天兔於十一月二十五日轉向西北方向移動，日間登陸越南南部並減弱，最後於翌日在越南南部減弱為低壓區。

根據報章報導，天兔為菲律賓帶來暴雨及水浸，造成最少一人死亡。天兔吹襲越南期間亦引發水浸，造成至少兩人死亡。

熱帶低氣壓萬宜(1828)於十一月二十日晚上在關島之東南1 420公里的北太平洋西部上形成，向西北偏西移動並逐漸增強。萬宜於十一月二十二日增強為颱風，翌日轉向偏北方向移動並達到最高強度，中心附近最高持續風速估計為每小時145公里。隨後兩天萬宜移動緩慢並在呂宋以東海域徘徊。萬宜於十一月二十六日轉向西北方向移動並迅速減弱，最後於翌日清晨在西北太平洋上減弱為低壓區。

十二月

一股熱帶低氣壓於十二月二十五日晚上在馬尼拉之東南偏東約1630公里的北太平洋西部上形成，採取西至西北偏西路徑移向菲律賓中部，其中心附近最高持續風速估計為每小時55公里。該熱帶低氣壓於十二月二十九日橫過菲律賓中部後轉向西南方向移動，翌日早上在蘇祿海上減弱為低壓區。

根據報章報導，該熱帶低氣壓為菲律賓帶來暴雨並引發山泥傾瀉，造成156人死亡，26人失蹤及105人受傷。

熱帶低氣壓帕布(1901)於二零一八年十二月三十一日下午在胡志明市之東南偏東約690公里的南海南部上形成，向西南偏西移向越南以南海域。帕布於二零一九年一月二日轉向偏西方向移動，翌日增強為熱帶風暴並橫過泰國灣。帕布於一月四日清晨達到其最高強度，中心附近最高持續風速估計為每小時85公里。帕布於當晚橫過馬來半島並減弱，翌日進入安達曼海並進一步減弱為熱帶低氣壓，最後於一月七日在孟加拉灣減弱為低壓區。

根據報章報導，帕布為越南帶來暴雨，造成最少一人死亡、六人受傷。根據泰國氣象局記錄，帕布是自1951年有記錄以來首個在一月橫過泰國的熱帶氣旋，吹襲泰國期間帶來狂風暴雨，引發水浸及山泥傾瀉，造成至少八人死亡。帕布亦在馬來西亞也造成最少一人死亡。

備註：人命傷亡及財物損毀數據是根據報章報導輯錄而成。

Section 2 TROPICAL CYCLONE OVERVIEW FOR 2018

2.1 Review of tropical cyclones in 2018

2.1.1 Tropical cyclones over the western North Pacific (including the South China Sea)

In 2018, a total of 33 tropical cyclones occurred over the western North Pacific (WNP) and the South China Sea (SCS) bounded by the Equator, 45°N, 100°E and 180°, more than the long-term (1961 - 2010) average figure of around 30. During the year, 13 of the tropical cyclones attained typhoon intensity or above, less than the long-term average (1961 - 2010) of about 15, with seven of them reaching super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre).

Figure 2.1 shows the monthly frequencies of the occurrence of tropical cyclones in WNP and SCS in 2018.

During the year, 11 tropical cyclones made landfall over China, with three of them crossing the south China coast within 300 km of Hong Kong and two crossed Taiwan. Two tropical cyclones made landfall over the Korean Peninsula, five made landfall over Japan, six traversed the Philippines and four made landfall over Vietnam. With an estimated maximum sustained wind speed of 250 km/h and a minimum sea-level pressure of 900 hPa near their centres (Table 4.1), Super Typhoon Mangkhut (1822) in September and Super Typhoon Yutu (1826) in October (Figure 2.3a and 2.3b) were the most intense tropical cyclones over the western North Pacific and the South China Sea in 2018.

2.1.2 Tropical cyclones in Hong Kong's area of responsibility

Amongst the 33 tropical cyclones in 2018, 17 of them occurred inside Hong Kong's area of responsibility (i.e. the area bounded by 10°N, 30°N, 105°E and 125°E), slightly more than the long-term annual average figure of around 16 (Table 2.1). 13 of them developed within Hong Kong's area of responsibility. Altogether, 393 tropical cyclone warnings to ships and vessels were issued by the Hong Kong Observatory in 2018 (Table 4.2).

2.1.3 Tropical cyclones over the South China Sea

12 tropical cyclones affected SCS bounded by 10°N, 25°N, 105°E and 120°E in 2018, on par with the long-term annual average of around 12. Six of them formed within SCS.

2.1.4 Tropical cyclones affecting Hong Kong

In 2018, the typhoon season in Hong Kong started on 5 June when Tropical Depression Ewiniar (1804) skirted past the sea areas east of Hainan Island, necessitating the issuance of the Standby Signal No. 1. The typhoon season ended with the cancellation of all tropical cyclone warning signals on 2 November with Tropical Depression Yutu (1826) lingering over the northeastern part of the South China Sea weakened significantly that day.

Six tropical cyclones affected Hong Kong during 2018 (Figure 2.2), close to the long-term (1961-2010) average of about six in a year (Table 2.2). They were Tropical Storm Ewiniar (1804) in June, Tropical Storm Son-Tinh (1809) in July, Severe Tropical Storm Bebinca (1816) in August, Super Typhoon Mangkhut (1822) and Tropical Storm Barijat (1823) in September, and Super

Typhoon Yutu (1826) in October to November. After Hato in 2017, the No.10 Hurricane Signal was issued by the Hong Kong Observatory again during the passage of Mangkhut on 16 September. It was the highest tropical cyclone warning signal issued in 2018. The Signal No. 10 lasted for ten hours which was the second longest duration since World War II, just after the 11 hours of York in 1999. The rest of the five tropical cyclones all necessitated the issuance of the Strong Wind Signal No. 3 in Hong Kong. Moreover, Tropical Storm Son-Tinh (1809) necessitated the issuance of the tropical cyclone warning signals on two separate occasions. Severe Tropical Storm Bebinca (1816) lingered over the seas off the coast of western Guangdong for a rather long time. The tropical cyclone warning signals had been in force for 132 hours and 5 minutes, making it the third longest since 1946.

2.1.5 Tropical cyclone rainfall

Tropical cyclone rainfall (total rainfall recorded at the Hong Kong Observatory Headquarters from the time when a tropical cyclone comes within 600 km of Hong Kong to 72 hours after it has dissipated or moved more than 600 km away from Hong Kong) in 2018 was 723.7 mm (Table 4.8.1). This accounted for approximately 33.5 % of the year's total rainfall of 2162.9 mm and was about 1 % below the 1961-2010 long-term average of 728.8 mm.

Severe Tropical Storm Bebinca (1816) brought 236.4 mm of rainfall to the Hong Kong Observatory Headquarters (Table 4.8.1) and was the wettest tropical cyclone in 2018.

2.2 Monthly overview

A monthly overview of tropical cyclones in 2018 is given in this section. Detailed reports on tropical cyclones affecting Hong Kong, including reports of damage, are presented in Section 3.

JANUARY

Bolaven (1801) formed as a tropical depression near the Philippines about 600 km south-southeast of Manila on the morning on 2 January. It moved west to west-northwestwards across the southern part of the South China Sea. Bolaven intensified into a tropical storm the next day and reached peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It then started to weaken and finally degenerated into an area of low pressure over the sea areas off the southern part of Vietnam on the morning of 4 January.

According to press reports, torrential rain and squalls brought by Bolaven caused severe flooding and landslides in the Philippines, leaving at least three people dead.

FEBURARY

Sanba (1802) formed as a tropical depression over the western North Pacific about 360 km south-southwest of Yap on the morning on 11 February. It moved west to west-northwestwards towards the southern part of the Philippines. Sanba intensified into a tropical storm in the small hours of 13 February and reached peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It weakened into a tropical depression that night, before finally degenerating into an area of low pressure over the Sulu Sea on the night of 14 February.

According to press reports, torrential rain and squalls brought by Sanba caused severe flooding and landslides in the Philippines, leaving at least 14 people dead.

MARCH TO APRIL

Jelawat (1803) formed as a tropical depression over the western North Pacific about 430 km southeast of Yap on the afternoon of 25 March. It intensified into a tropical storm the next day and moved northwestwards. Jelawat turned northwards on 27 March and slowed down on 29 March, drifting eastwards and continuing to develop. Jelawat turned northeastwards the next day and attained super typhoon intensity, reaching its peak intensity with an estimated sustained wind of 195 km/h near its centre. It subsequently weakened rapidly while tracking eastwards. It finally dissipated over the western North Pacific southeast of Iwo Jima on 1 April.

MAY

No tropical cyclone formed over the western North Pacific and the South China Sea in May 2018.

JUNE TO NOVEMBER

Ewiniar (1804) formed as a tropical depression over the southern part of the South China Sea about 510 km south of Xisha on the night of 2 June and moved north-northwestwards. Ewiniar turned to move north to north-northeastwards on 4 June and skirted past the sea areas east of Hainan Island the next day. Slowing down and intensifying into a tropical storm on 6 June, it lingered and made a loop east of Leizhou Peninsula and the northeastern part of Hainan Island. Ewiniar reached its peak intensity with an estimated sustained wind of 75 km/h near its centre on the morning of 7 June and started to move steadily north-northeastwards, making landfall near Yangjiang across the coast of western Guangdong that night. It weakened gradually and finally degenerated into an area of low pressure over the inland areas of Guangdong on the night of 8 June.

According to press reports, Ewiniar brought torrential rain to Hainan, Guangdong, Guangxi, Fujian and Hunan, with flooding and landslides reported in many places. At least five people were killed and over 210 000 people were affected.

Maliksi (1805) formed as a tropical depression over the western North Pacific about 760 km east-northeast of Manila on the early morning of 8 June. It moved north-northwestwards at first and intensified gradually. Maliksi then turned to the northeast towards the sea areas south of Japan the next day. It developed into a severe tropical storm that night, reaching its peak intensity on the morning of 10 June with an estimated sustained wind of 110 km/h near its centre. Maliksi finally evolved into an extratropical cyclone over the seas east of Japan on 12 June.

Gaemi (1806) formed as a tropical depression over the northeastern part of the South China Sea about 180 km southwest of Gaoxiong on 14 June. It moved northeastwards and swept across the southern part of Taiwan the next day. Gaemi intensified into a tropical storm near Okinawa on 16 June, reaching its peak intensity that night with an estimated sustained wind of 75 km/h

near its centre and evolving into an extratropical cyclone over the seas south of Japan the next day.

According to press reports, electricity supply to around 13,500 households was interrupted and two oil tankers went aground near Gaoxiong during the passage of Gaemi over Taiwan. Gaemi caused extensive flooding and landslides in Okinawa and at least two persons were injured.

Prapiroon (1807) formed as a tropical depression over the western North Pacific about 750 km south-southeast of Okinawa on the early morning of 29 June. It tracked generally north-northwestwards and intensified gradually. Prapiroon turned north to northeastwards on 1 July and intensified into a typhoon on the morning of 2 July, reaching its peak intensity with an estimated sustained wind of 120 km/h near its centre. Prapiroon started to weaken afterwards, before finally evolving into an extratropical cyclone over the sea areas north of Honshu, Japan on 4 July.

According to press reports, at least four people were injured in Okinawa during the passage of Prapiroon. It also brought squalls and heavy rain to Kyushu and Shikoku of Japan, leaving one dead and 16 injured, and electricity supply to over 50,000 households interrupted in Kyushu. At least one people was killed and one was missing in the Republic of Korea during the passage of Prapiroon.

Maria (1808) formed as a tropical depression over the western North Pacific about 430 km southeast of Guam on the night of 3 July. It tracked generally northwestwards and intensified rapidly. It developed into a super typhoon on the morning of 6 July and reached its peak intensity with an estimated sustained wind of 220 km/h near its centre on the morning of 9 July. Maria swept across the sea areas to the south of Okinawa and then north of Taiwan and started to weaken gradually. Maria made landfall over the coast of Fujian on the morning of 11 July and dissipated over Jiangxi the next day.

According to press reports, at least one people was killed and eight were injured in Taiwan during the passage of Maria. Electricity supply to around 126,000 households were interrupted. In Fujian and Zhejiang, at least one person was killed, nine were missing and 550,000 people were affected during the passage of Maria. There were backflow of sea water in many places.

Son-Tinh (1809) formed as a tropical depression over the western North Pacific about 650 km northeast of Manila on the morning of 16 July and moved quickly westwards across the Luzon Strait on that day. It continued to move at a fast pace after entering the northern part of the South China Sea on 17 July. Son-Tinh intensified into a tropical storm before noon, reaching its peak intensity with an estimated sustained wind of 85 km/h near the centre on the early morning of 18 July. After moving across Hainan Island and Beibu Wan, Son-Tinh degenerated into an area of low pressure over the northern part of Vietnam on 19 July and its remnant continued to track westward further inland on that day. The low pressure area associated with the remnant of Son-Tinh made a sharp turn to the east over the Indo-China and moved towards Beibu Wan on 20 July. It re-intensified into a tropical depression over Beibu Wan on 22 July and took a northeasterly track, sweeping across the northwestern part of Hainan Island. Son-Tinh then turned north and moved across Leizhou Peninsula on 23 July, before dissipating over Guangxi on 24 July.

According to press reports, Son-Tinh greatly disrupted the traffic of Hainan Island during its passage. Son-Tinh and its remnant also brought torrential rain to Vietnam. At least 32 people were killed, 17 were reported missing and more than 5,000 houses collapsed.

Ampil (1810) formed as a tropical depression over the western North Pacific about 800 km south-southeast of Okinawa on the night of 18 July and moved slowly at first. It intensified into a tropical storm the next day and took on a northwest course towards the East China Sea. Ampil further intensified into a severe tropical storm on the night of 20 July, reaching its peak intensity with an estimated sustained wind of 90 km/h near its centre. It moved across the vicinity of Jiangsu and weakened on 22 July. Ampil continued to sweep across Shandong and Hebei the next day, before evolving into an extratropical cyclone over the northeastern part of China on 24 July.

According to press reports, at least one people was killed in China during the passage of Ampil. Near 1.8 million people were affected with a direct economic loss around 1.19 billion RMB.

A tropical depression formed over the western North Pacific about 390 km southeast of Dongsha on 21 July. It tracked northeastwards across the Luzon Strait, heading towards the seas east of Taiwan. The tropical depression reached its peak intensity with an estimated sustained wind of 55 km/h near its centre on the early morning of 22 July. It then turned to move northwards and weakened into an area of low pressure over the East China Sea the next day.

Wukong (1811) formed as a tropical depression over the western North Pacific about 890 km northwest of Wake Island on the night of 22 July. Tracking generally northwards, it intensified gradually. Wukong intensified into a severe tropical storm on 25 July, reaching its peak intensity with an estimated sustained wind of 105 km/h near its centre. It finally evolved into an extratropical cyclone over the seas east of Japan on 26 July.

Jongdari (1812) formed as a tropical depression over the western North Pacific about 690 km southwest of Iwo Jima on 25 July. Moving generally northeastward, it intensified gradually and became a typhoon on the night of 26 July. Jongdari reached its peak intensity on the morning of 27 August with an estimated maximum sustained wind of 140 km/h near its centre. It moved across the southern part of Honshu, and then the northern part of Kyushu of Japan on 29 July, and weakened into a tropical storm. Jongdari made an anti-clockwise loop over the seas south of Kyushu in the next two days and then moved across the East China Sea on a south-southwesterly course. Jongdari made a sharp turn to the north on the morning of 2 August and then picked up speed towards the west. It made landfall over the coast of Shanghai on 3 August during the day, moved inland and weakened into an area of low pressure over Jiangsu at night.

According to press reports, at least 24 people were injured and over 400 flights were cancelled in Japan during the passage of Jongdari. Electricity supply to more than 150,000 households was interrupted.

Shanshan (1813) formed as a tropical depression over the western North Pacific about 880 km east-northeast of Guam on the night of 2 August and tracked westwards at first. It intensified gradually and started to track north-northwestwards towards Japan on 3 August. Shanshan developed into a typhoon on 4 August, reaching its peak intensity on 7 August with an estimated maximum sustained wind of 145 km/h near its centre. Shanshan weakened gradually afterwards and skirted past the coastal areas of Kanto region on 9 August, and turned to move northeastwards. It evolved into an extratropical cyclone over the sea areas east of Japan the next day. According to press reports, at least six people were injured in Japan during the passage of Shanshan.

Yagi (1814) formed as a tropical depression over the western North Pacific about 980 km southeast of Okinawa on 7 August and moved slowly at first. It intensified into a tropical storm

the next day and turned to move towards Okinawa in the following few days. After sweeping across the sea areas south of Okinawa, Yagi moved across the East China Sea on a northwesterly course and reached its peak intensity on the afternoon of 12 August with an estimated maximum sustained wind of 85 km/h near its centre. After making landfall over the coast of Zhejiang, Yagi moved inland and weakened. It finally degenerated into an area of low pressure over Shandong on 16 August.

According to press reports, Yagi left at least two deaths during its passage over eastern China.

Bebinca (1816) formed as a tropical depression over the northern part of the South China Sea about 540 km southwest of Hong Kong. Moving slowly northwards, it made landfall near Yangjiang of the western Guangdong around noon on 11 August. Bebinca then made an anti-clockwise loop over the coastal region of western Guangdong and moved back to the coastal waters that night. After drifting southeastwards on 12 August, Bebinca intensified into a tropical storm and looped slowly in anti-clockwise direction off the coast of western Guangdong on 13 and 14 August. Bebinca picked up speed to move west-southwestwards and intensified into a severe tropical storm on 15 August, reaching its peak intensity with an estimated maximum sustained wind of 90 km/hr near its centre. It moved across Beibu Wan the next day. Bebinca made landfall over the northern part of Vietnam and weakened into an area of low pressure inland on 17 August.

According to press reports, Bebinca brought torrential rain and squalls to Guangdong, Guangxi and Hainan. At least three people were killed and 2 were reported missing. Bebinca also caused extensive flooding and landslides in Vietnam during its passage, killing at least 10 people with another three missing.

Leepi (1815) formed as a tropical depression over the western North Pacific about 560 km south-southeast of Iwo Jima on the night of 11 August. It tracked northwestward and intensified gradually. Leepi developed into a severe tropical storm on 13 August, reaching its peak intensity with an estimated maximum sustained wind of 90 km/h near its centre. Leepi swept across Kyushu of Japan on 15 August and then weakened into an area of low pressure over the seas south of the Korean Peninsula.

According to press reports, Leepi brought torrential rain and squalls to Kyushu of Japan. One person fell into the sea under strong wind and suffered from serious injury.

Originating from the eastern North Pacific, tropical storm Hector (1817) crossed the International Date Line and entered the western North Pacific on the small hours of 14 August, with an estimated maximum sustained wind of 75 km/h near its centre. Moving west-northwestwards, Hector continued to weaken and dissipate over sea the next day.

Rumbia (1818) formed as a tropical depression over the western North Pacific about 90 km north-northwest of Okinawa on the morning of 15 August, and developed into a tropical storm that afternoon. It generally took on a northwest or west-northwesterly course across the East China Sea. Rumbia reached its peak intensity with an estimated maximum sustained wind of 85 km/h near its centre on the night of 16 August. After making landfall over the coast of Shanghai on the morning of 17 August, Rumbia moved inland on a west-northwesterly course and weakened gradually. It finally degenerated into an area of low pressure over Henan the next night.

According to press reports, at least 22 people were killed and seven were missing in eastern and central China during the passage of Rumbia. More than 10 million people were affected, with a direct economic loss of about five billion RMB.

Soulik (1819) formed as a tropical depression over the western North Pacific about 190 km northwest of Guam on the night of 16 August. It generally took on a northerly track and intensified gradually. Soulik intensified into a severe typhoon over the sea areas west of Iwo Jima on the night of 18 August and turned to move west-northwestwards. It reached its peak intensity with an estimated maximum sustained wind of 165 km/h near its centre the next morning. Soulik swept across the East China Sea and the Yellow Sea afterwards and weakened gradually. It turned to track northeastwards, weakened into a severe tropical storm during the night of 23 August and moved across the Korean Peninsula. Soulik evolved into an extratropical cyclone over the seas north of Honshu, Japan the next night.

According to press reports, one people was swept away by freak waves and reported missing and two others were injured in the Republic of Korea during the passage of Soulik. At least one person was injured and electricity supply to over 20 000 households was interrupted on the island of Amami Oshima, Japan during the passage of Soulik.

Cimaron (1820) formed as a tropical depression over the western North Pacific about 1 060 km east of Guam on the morning of 18 August. It took on a northwesterly track in the direction of the sea areas south of Japan and intensified gradually. Cimaron developed into a severe typhoon on 22 August, reaching its peak intensity with an estimated maximum sustained wind of 165 km/h near its centre. After skirting over Shikoku and then moving across the western part of Honshu, Japan on the night of 23 August, Cimaron finally evolved into an extratropical cyclone over the seas north of Honshu, Japan the next day.

According to press reports, Cimaron brought torrential rain and squalls to Japan with unleashed landslides, leaving at least three deaths and 22 injuries. Electricity supply to about 100 000 households was interrupted.

Originating in the northeastern part of the South China Sea, an area of low pressure near Taiwan developed into a tropical depression about 40 km north of Gaoxiong on the morning on 23 August with an estimated maximum sustained wind of 55 km/h near its centre. The tropical depression moved slowly and lingered around western Taiwan on that day. It swept across the Taiwan Strait on a northwesterly course on 24 August and made landfall over the coast of Fujian on the morning of 25 August. The tropical depression weakened into an area of low pressure over inland Fujian during the day.

According to press reports, torrential rain and squalls brought by the tropical depression triggered extensive flooding in Taiwan. At least seven people were killed and 119 people were injured.

Jebi (1821) formed as a tropical depression over the western North Pacific about 1 520 km east of Guam on the night of 27 August. It tracked northwestwards at first and intensified rapidly. Jebi intensified into a typhoon on 29 August and turned to move westwards. It further developed into a super typhoon on 31 August, reaching its peak intensity on the morning of 1 September with an estimated maximum sustained wind of 230 km/h near its centre. Jebi's track turned gradually from northwestwards to northwards and edged closer to the sea areas south of Japan in the next two days when it weakened into a severe typhoon. It swept across the eastern part

of Shikoku, Osaka Bay and Kansai of Honshu during the day of 4 September. It evolved into an extratropical cyclone over the seas west of Hokkaido the next day.

According to press reports, the torrential rain and squalls brought by Jebi wreaked havoc to Japan, with at least 11 people killed, 680 people injured. Electricity supply to more than 2 million households was interrupted. Record-breaking water levels were registered in the vicinity of Osaka because of the severe storm surge induced by Jebi, resulting in serious flooding over the coastal regions. The Kansai international airport was fully closed for three days because of serious inundation, forcing over 5 000 passengers to stay at the airport.

Tropical depression Mangkhut (1822) formed over the western North Pacific about 2 330 km east of Guam on 7 September. Moving westwards rapidly, it intensified gradually in the following few days. Mangkhut developed into a super typhoon on 11 September. It turned to move northwest on 14 September, reaching its peak intensity before making landfall over Luzon with an estimated maximum sustained wind of 250 km/h near the centre. Mangkhut weakened after crossing the northern part of Luzon and continued to track northwestwards quickly across the northern part of the South China Sea, edging towards the coast of Guangdong. Mangkhut weakened into a severe typhoon on the morning of 16 September and made landfall over the vicinity of Taishan of Guangdong before dusk. It then moved into western part of Guangdong and weakened further. Mangkhut degenerated into an area of low pressure over Guangxi the next night.

According to press reports, Mangkhut brought torrential rain and squalls to Luzon. There were at least 82 deaths, 138 injuries and two missing. Around 15 000 houses were collapsed. Mangkhut brought damaging winds and severe storm surge to the coast of Pearl River estuary, leading to damages of many buildings and coastal structures, as well as serious inundation of low lying areas. In Macao, 40 people were injured and more than 5 500 people were evacuated. There were a number of reports of building damages. The water level of Inner Harbour once went up to 1.9 metres or higher. At least six people were killed and more than 3.3 million were affected in Guangdong, Guangxi, Hainan, Guizhou and Yunnan.

Barijat (1823) formed as a tropical depression over the sea areas about 200 km southeast of Gaoxiong on the morning of 10 September and moved generally westwards across the northern part of the South China Sea. It intensified into a tropical storm on 11 September and reached its peak intensity with an estimated maximum sustained wind of 85 km/h near its centre the next night. Barijat moved across Leizhou Peninsula and weakened on 13 September. It dissipated over inland Guangxi in that evening. According to press reports, 40 000 people were evacuated in Maoming and Zhanjiang during the passage of Barijat.

Trami (1824) formed as a tropical depression over the western North Pacific about 320 km northwest of Guam on the night of 21 September. It tracked generally west-northwestwards and intensified rapidly. Trami developed into a typhoon on 23 September and further intensified into a super typhoon the next day, reaching its peak intensity in the small hours of 25 September with an estimated maximum sustained wind of 220 km/h near its centre. Trami turned to move slowly on a north-northeasterly course on the night of 25 September and started to weaken. It moved towards the vicinity of the Ryukyu Islands gradually in the following days. After skirting past Okinawa on 29 September, Trami took on a northeast course towards Honshu of Japan. It skirted past Honshu of Japan during the night of 30 September and evolved into an extratropical cyclone over the northern part of Honshu the next day.

According to press reports, Trami left at least five deaths with one missing and 200 injured during its passage to Japan. Electricity supply to more than 1.3 million households was interrupted. Transportation services in Japan were paralyzed, affecting more than 100 000 passengers.

Kong-rey (1825) formed as a tropical depression over the western North Pacific about 370 km south-southeast of Guam on the early morning of 29 September. Moving west-northwestwards, it intensified rapidly. Kong-rey developed into a typhoon on the night of 30 September and further intensified into a super typhoon the next night, reaching its peak intensity on the morning of 2 October with an estimated maximum sustained wind of 230 km/h near its centre. It started to weaken on 3 October and continued to move towards the vicinity of the Ryukyu Islands. Kong-rey moved across Jeju and the southern part of the Korean Peninsula on 5 and 6 October. It finally evolved into an extratropical cyclone in the vicinity of Hokkaido on 7 October.

According to press reports, Kong-rey brought torrential rain and squalls to Japan, with at least one people killed and 10 people injured. Electricity supply to more than 40 000 households was interrupted in Okinawa and Kagoshima Prefectures. At least two people were killed and one was missing in the Republic of Korea during the passage of Kong-rey, and electricity supply to more than 60 000 households was interrupted.

Yutu (1826) formed as a tropical depression over the western North Pacific about 1 620 km east-southeast of Guam on the afternoon of 21 October. Tracking generally northwestwards, it intensified rapidly. Yutu developed into a super typhoon on 24 October, reaching its peak intensity the next day with an estimated maximum sustained wind of 250 km/h near its centre. Yutu turned to move west to west-southwestwards on 26 and 27 October and started to weaken gradually. After moving across Luzon on 30 October, Yutu entered the central part of the South China Sea and weakened into a typhoon. Yutu further weakened into a severe tropical storm on the next day and turned to move northwestwards across the northeastern part of the South China Sea. Yutu moved northwards slowly on 1 November and weakened into a tropical storm that night. Under the influence of the dry northeast monsoon over southern China, Yutu further weakened into a tropical depression the next day and lingered over the northeastern part of the South China Sea. It finally weakened into an area of low pressure at night.

According to press reports, Yutu left at least 2 deaths and 133 injured during its passage to Saipan. Electricity supply for many places was interrupted. Yutu also brought torrential rain and squalls to the northern part of the Philippines which triggered landslides and flooding, killing at least 20 people.

Toraji (1827) formed as a tropical depression over the southern part of the South China Sea about 550 km east of Ho Chi Minh City on the afternoon of 17 November. With an estimated maximum sustained wind of 55 km/h near its centre, Toraji moved on a northwesterly track in the direction of the southern part of Vietnam. It made landfall over the southern part of Vietnam on the afternoon of the next day and weakened into an area of low pressure rapidly. According to press reports, at least 19 people were killed in Vietnam during the passage of Toraji.

Usagi (1829) formed as a tropical depression over the western North Pacific about 940 km east-southeast of Manila on the morning of 20 November. It tracked westwards and moved across the southern part of the Philippines. Usagi crossed the southern part of the South China Sea on 22 November. It intensified into a tropical storm the next day and turned to move on a

west-southwesterly course. Usagi further intensified into a severe tropical storm on 24 November and reached its peak intensity with an estimated maximum sustained wind of 90 km/h near its centre. It changed its course to move northwestwards on 25 November. Usagi made landfall over the southern part of Vietnam during the day and weakened gradually. It finally weakened into an area of low pressure over the southern part of Vietnam on the early morning of 26 November.

According to press reports, Usagi brought torrential rain and flooding to the Philippines, with at least one people killed. In Vietnam, the flooding brought by Usagi also killed at least two people.

Man-yi (1828) formed as a tropical depression over the western North Pacific about 1 420 km southeast of Guam on the night of 20 November. Tracking west-northwestwards, it intensified gradually. Man-yi developed into a typhoon on 22 November and turned to move northwards the next day, reaching its peak intensity with an estimated maximum sustained wind of 145 km/h near its centre. It moved slowly and lingered over the seas east of Luzon in the following two days. Man-yi turned to track northwestwards and weakened rapidly on 26 November, before finally weakening into an area of low pressure over the western North Pacific on the early morning of 27 November.

DECEMBER

A tropical depression formed over the western North Pacific about 1 630 km east-southeast of Manila on the night of 25 December. It took on a west to west-northwesterly track in the direction of the central part of the Philippines with an estimated maximum sustained wind of 55 km/h near its centre. After crossing the central part of the Philippines on 29 December, the tropical depression turned to move southwestwards and degenerated into an area of low pressure the next morning.

According to press reports, the tropical depression brought torrential rain to the Philippines and triggered landslides, leaving 156 deaths, 26 missing and 105 injuries.

Pabuk (1901) formed as a tropical depression over the southern part of the South China Sea about 690 km east-southeast of Hochiminh on the afternoon of 31 December 2018 and tracked west-southwestwards in the direction of the seas south of Vietnam. It turned to move westwards on 2 January 2019. Pabuk intensified into a tropical storm and moved across the Gulf of Thailand the next day. It reached its peak intensity with an estimated maximum sustained wind of 85 km/h near its centre on the small hours of 4 January. Pabuk moved across the Malay Peninsula that night and weakened. After entering the Andaman Sea the next day, it further weakened into a tropical depression. Pabuk finally degenerated into an area of low pressure over the Bay of Bengal on 7 January.

According to press reports, Pabuk brought heavy rain to Vietnam, leaving at least one death and six injuries. According to the Thai Meteorological Department, Pabuk was the first tropical cyclone making landfall over Thailand in January since record began in 1951. The torrential rain and squalls brought by Pabuk triggered flooding and landslides in Thailand, killing at least eight people. There was also one death report in Malaysia during the passage of Pabuk.

Note: Casualties and damage figures were compiled from press reports.

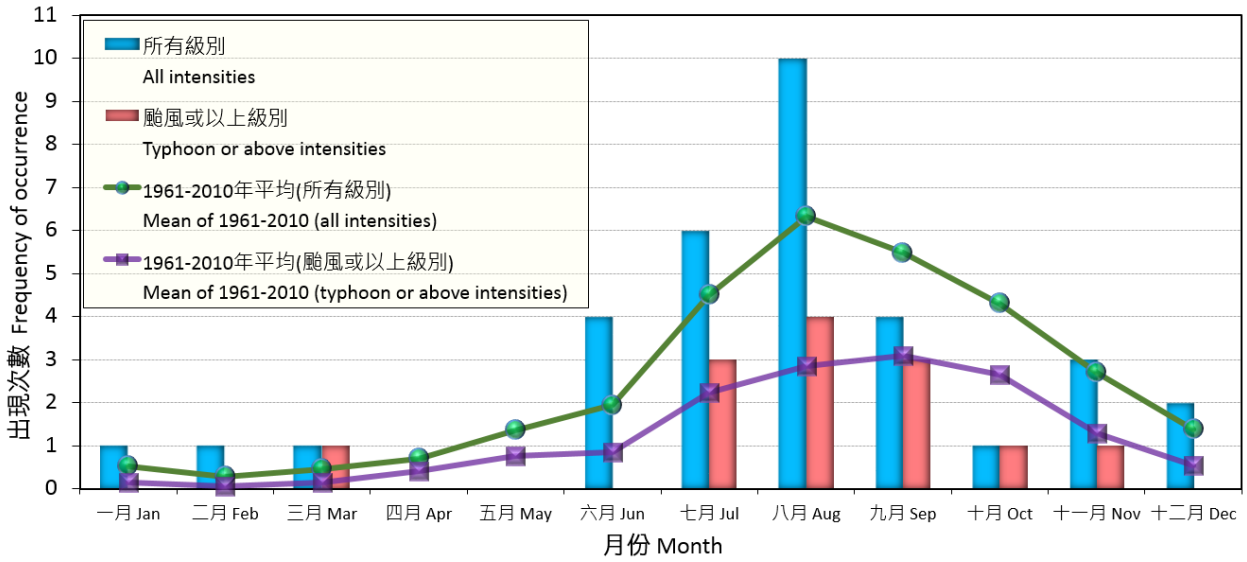

圖 2.1　二零一八年在北太平洋西部及南海區域的熱帶氣旋出現次數之每月分佈 (以熱帶氣旋在該月初次出現為準，假如一熱帶氣旋在九月形成並在十月首次增強為颱風或以上級別，它在「所有級別」及「颱風或以上級別」的統計數字將分別計算在九月及十月份內)。

Figure 2.1　Monthly frequencies of the occurrence of tropical cyclones in the western North Pacific and the South China Sea in 2018 (based on the first occurrence of the tropical cyclone in the month; for example if a tropical cyclone forms in September and first intensifies into typhoon or above intensities in October, its related statistics for “all intensities” and “typhoon or above intensities” will be counted in September and October respectively).

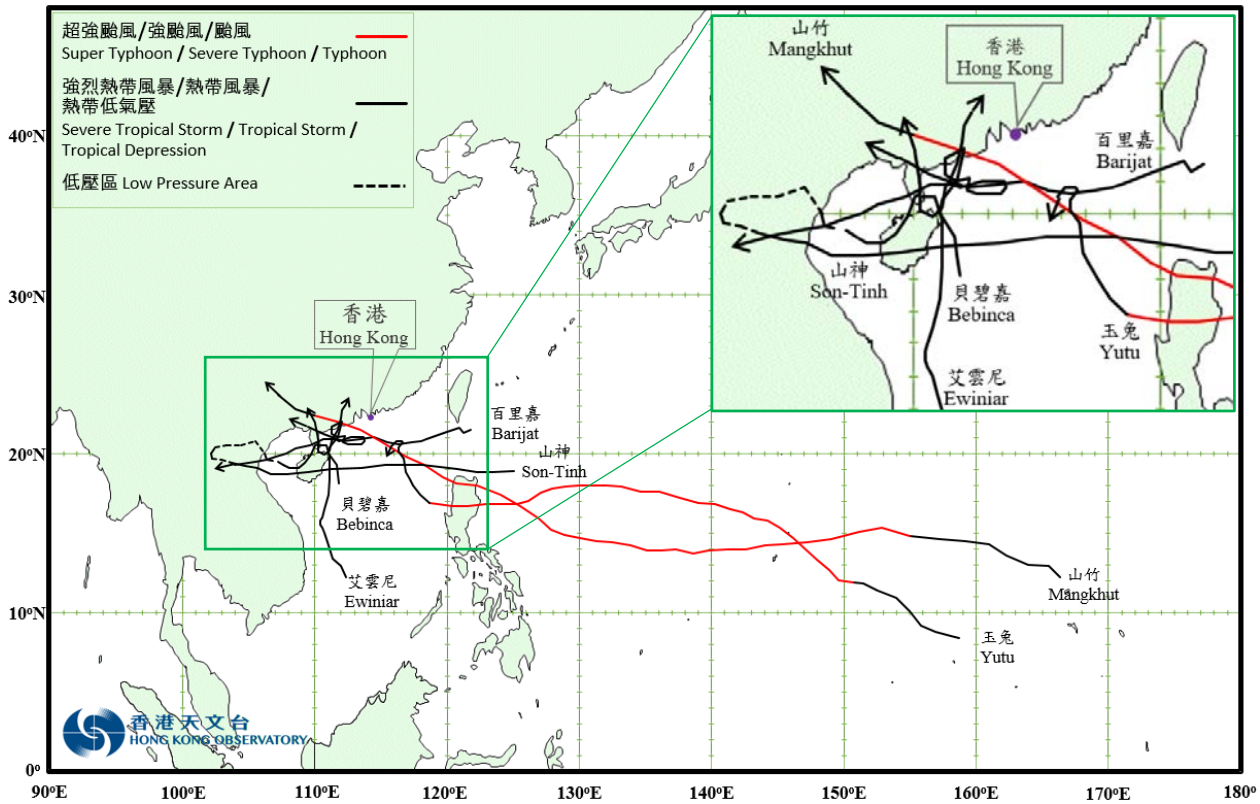

圖 2.2　二零一八年六個影響香港的熱帶氣旋的路徑圖。

Figure 2.2　Tracks of the six tropical cyclones affecting Hong Kong in 2018.

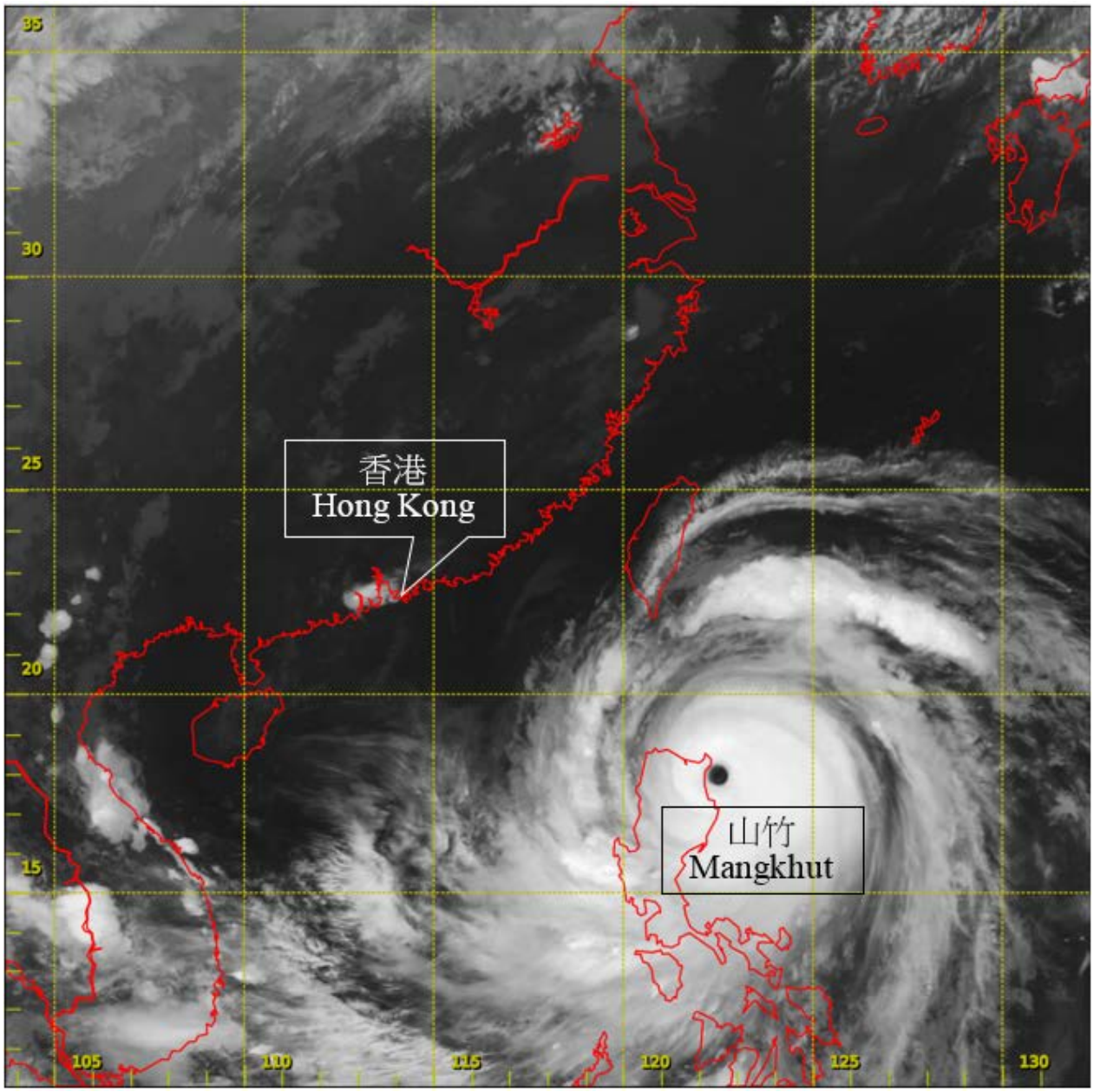

圖2.3a　二零一八年九月十四日下午11時左右超強颱風山竹(1822)的紅外線衛星圖片，當時山竹達到其最高強度，中心附近最高持續風速估計為每小時250公里，而最低中心氣壓為900百帕斯卡。

Figure 2.3a　Infra-red satellite imagery of Super Typhoon Mangkhut (1822) around 11 p.m. on 14 September 2018, when Mangkhut was at peak intensity with estimated maximum sustained winds of 250 km/h near its centre and minimum sea-level pressure of 900 hPa.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by the Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

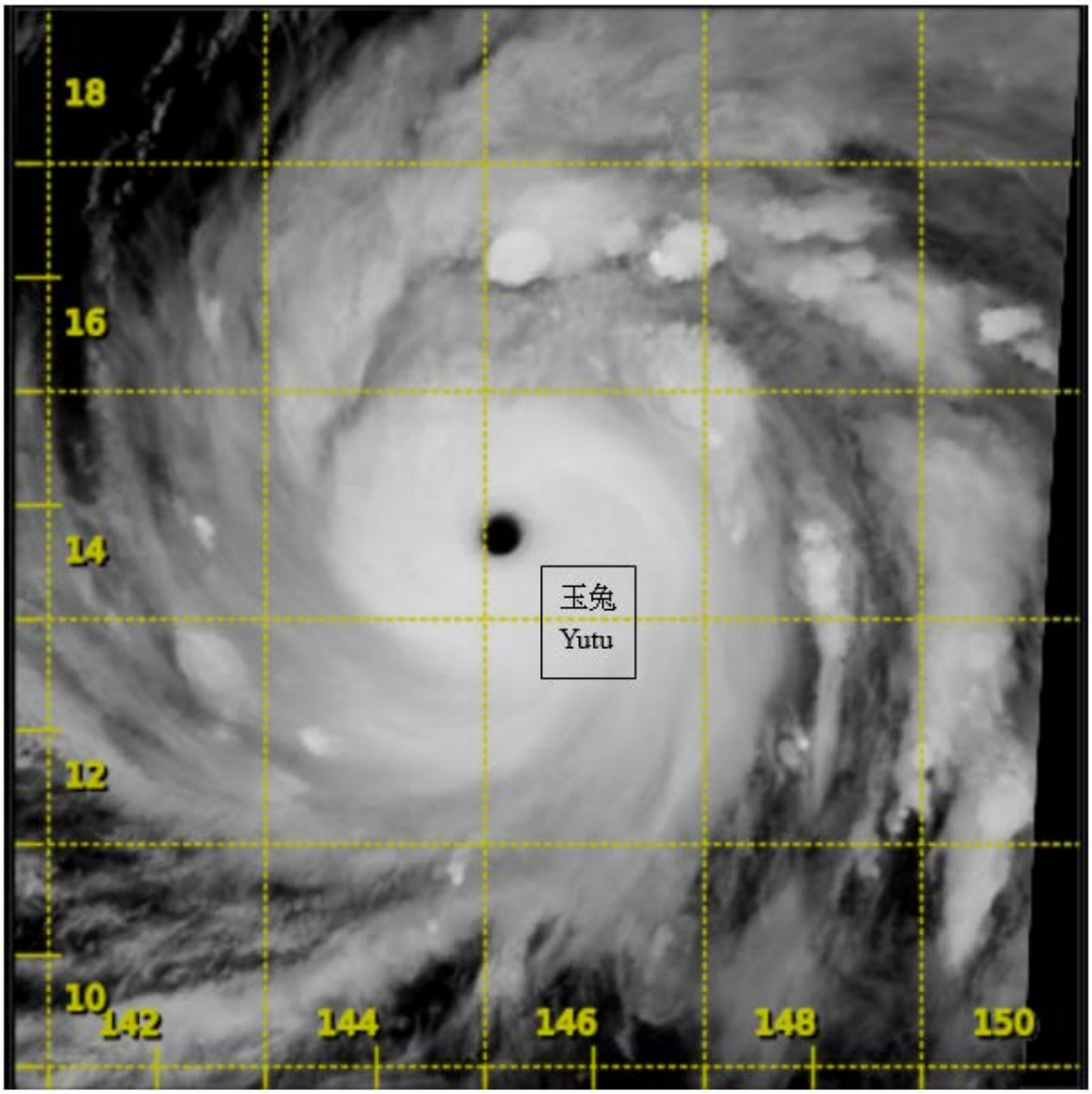

圖2.3b　二零一八年十月二十四日下午8時左右超強颱風玉兔(1826)的紅外線衛星圖片，當時玉兔達到其最高強度，中心附近最高持續風速估計為每小時250公里，而最低中心氣壓為900百帕斯卡。

Figure 2.3b　Infra-red satellite imagery of Super Typhoon Yutu (1826) around 8 p.m. on 24 October 2018, when Yutu was at peak intensity with estimated maximum sustained winds of 250 km/h near its centre and minimum sea-level pressure of 900 hPa.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by the Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

表 2.1　在香港責任範圍內(10°-30°N, 105°-125°E)熱帶氣旋出現之每月分佈(以熱帶氣旋在該月初次出現為準)

Table 2.1　Monthly distribution of the occurrence of tropical cyclones in Hong Kong's area of responsibility (10° - 30°N, 105° - 125°E), based on the first occurrence of the tropical cyclone in the month

月份 Month / 年份 Year	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	共 Total
1961					3	5	2	5	4	3	1	1	24
1962					3		4	5	4	1	3		20
1963						3	3	3	2			2	13
1964					1	1	5	3	6	3	6	1	26
1965	1				2	3	4	3	2		1		16
1966					2		5	2	3	2	2	1	17
1967			1	1		1	2	6	1	2	3		17
1968							2	4	2	1	3		12
1969							3	3	4	1			11
1970		1				2	2	3	4	5	3		20
1971				1	2	2	5	3	3	4			20
1972	1					3	2	4	2	1	1	1	15
1973							4	4	2	4	3		17
1974						3	2	4	2	4	4	2	21
1975	1					1		3	2	3	1	1	12
1976					1	1	1	4	1		1	1	10
1977						1	4	1	3		1		10
1978	1			1		2	2	4	5	4	1		20
1979				1	2	1	3	5	2	2	1	1	18
1980			1		3	1	5	2	3	1	1		17
1981						3	3	3	1	1	3	1	15
1982			2		1	1	3	3	3	1		2	16
1983						1	3	1	3	5	2		15
1984						2	2	4	2	2	2		14
1985						2	2	2	4	4	1		15
1986					1	1	1	4	1	3	3	2	16
1987						1	3	2	1	1	3	1	12
1988	1				1	3	1	1	2	5	2	1	17
1989					2	1	4	2	4	3	1		17
1990					1	4	2	3	3	3	2		18
1991				1	1	1	3	2	2	1	3		14
1992						2	3	2	2	2			11
1993						1	1	2	3	2	2	3	14
1994				1	1	2	6	5	2	2		1	20
1995						1	1	5	5	3	1	1	17
1996		1		1	2		3	3	2	1	2		15
1997					1		1	4	1	2	1		10
1998							1	3	4	3	3	1	15
1999				1		1	1	2	3	2	1	1	12
2000					2	1	3	5	3	3	2	1	20
2001					1	2	4	2	2	1	1	1	14
2002	1					1	3	2	3				10
2003				1	1	2	2	3	1	1	1		12
2004			1		1	3	2	2	2	1	2	1	15
2005			1				2	3	4	3	2		15
2006					1	1	3	3	4	1	2	1	16
2007							1	4	3	1	3		12
2008				1	2	1	2	3	5	1	2		17
2009					2	2	3	2	3	4	1		17
2010							3	4	2	2			11
2011					2	3	1	2	2	2			12
2012				1		3	2	3	1	2		2	14
2013						2	3	4	4	3	3		19
2014	1					1	2		3		1	2	10
2015	1			1	1	1	2	2	2	2		1	13
2016					1		3	1	4	3	1	2	15
2017	1			1		1	6	3	4	2	3	1	22
2018	1					2	4	4	2	1	2	1	17
平均 Average (1961-2010)	0.1	0.0	0.1	0.2	0.8	1.4	2.6	3.1	2.7	2.1	1.7	0.6	15.6

表 2.2　　影響香港的熱帶氣旋之每月分佈

Table 2.2　　Monthly distribution of tropical cyclones affecting Hong Kong

月份 Month# / 年份 Year	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	共 Total
1961					1		3		2				6
1962							2	1		1			4
1963						1	1	1	1				4
1964					1	1		1	4	3			10
1965						1	2		2		1		6
1966					1		3	1	1				6
1967				1		1	1	3		1	1		8
1968							1	3	2				6
1969							1		2	1			4
1970							1	2	1	2			6
1971					1	2	3	1	1	1			9
1972						2	1	1			1		5
1973							2	3	2	2			9
1974						2	1		2	4	1	1	11
1975						1		1	2	3			7
1976						1	1	2	1				5
1977						1	3	1	3				8
1978				1			1	2	2	2			8
1979							2	2	2				6
1980					1	1	4	1	2	1			10
1981						1	2	1	1				5
1982						1	2		1	1			5
1983							3		2	2			7
1984						1	1	2	1				5
1985						1	1		2	1			5
1986							1	2		1			4
1987						1		2	1	1			5
1988					1	1	1		1	2			6
1989					1	1	2		1	2			7
1990					1	2	1	1	1				6
1991							3	1	2				6
1992						1	3	1					5
1993						1	1	2	3	1	1		9
1994						2		1	1				4
1995							1	4	2	1			8
1996							2	2	2	1			7
1997							1	1					2
1998								2	1	2			5
1999				1		1	1	1	3	1			8
2000						1	2	2	1		1		7
2001						2	2	1	1				6
2002								2	1				3
2003							2	1	1				4
2004						1	1	1					3
2005								1	2				3
2006					1	1		3	1	1			7
2007								1	1				2
2008				1		1		2	1	1			6
2009						2	2	1	3				8
2010							2	1	1	1			5
2011						2	1		1	1			5
2012						2	1	2					5
2013						2	1	2	1		1		7
2014						1	1		2				4
2015						1	1			1			3
2016					1		2	1	2	3			9
2017						1	1	2	2	1			7
2018						1	1	1	2	1			6
平均 Average (1961-2010)	0.0	0.0	0.0	0.1	0.2	0.7	1.5	1.3	1.5	0.9	0.1	0.0	6.0

熱帶氣旋警告信號首次發出的月份。# The month that the tropical cyclone warning signal was first issued.